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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,513	04/25/2005	Carlos Martins	RFR0062	7073
27305 7590 06/10/2008 HOWARD & HOWARD ATTORNEYS, P.C. THE PINEHURST OFFICE CENTER, SUITE #101 39400 WOODWARD AVENUE BLOOMFIELD HILLS, MI 48304-5151			EXAMINER TAPOCAL, WILLIAM E	
			ART UNIT 3744	PAPER NUMBER
			MAIL DATE 06/10/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/532,513

**Applicant(s)**

MARTINS ET AL.

**Examiner**

William E. Tapolcai

**Art Unit**

3744

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15 and 17-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15 and 17-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 3744

1. The finality of the Office action of March 20, 2008 is being withdrawn in order to render the action outlined below.

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 15, 17-20, 22, 23, 25-30, and 32-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,340,053 to Wu et al in view of U.S. Patent No. 4,274,482 to Sonoda. Wu et al discloses the claimed invention of a heat exchanger having a plurality of stacked plates which each have separate internal flow channels for the two fluids. The plates are clearly arranged in groups of plates. However, Wu et al does not disclose the fluid passes to be defined in one direction from the inlet to the outlet of the respective flow channels. Sonoda teaches a plate-type heat exchanger in which the stacked plates clearly have internal flow channels in which the fluid flows in one direction from the inlet to the outlet. See for example Fig. 3, where the fluid flow pattern is clearly shown. Thus, it would be obvious to substitute, for the stacked plates of Wu et al, stacked plates of the type taught in Sonoda, to yield the predictable result that the flow pattern is simplified and the heat exchanger is easy to manufacture. Wu et al further discloses turbulence generators 60 and 62 between the plates. The type of fluid used is considered to be a matter of obvious choice to one of ordinary skill in the art. No criticality or unexpected results are seen or have been disclosed for the fluids to be refrigerant and cooling fluid. Furthermore, the recitation in the claims of the heat

exchanger being a condenser is considered to be a statement of intended use and not a positive structural limitation. There is no positive recitation in the claims of the heat exchanger as being part of a refrigeration system in which the heat exchanger is located between a compressor and an expansion device. Also, the heat exchangers described in either Wu et al or Sonoda are fully capable of being used as condensers in a refrigeration system. Likewise, the recitation in the claims of the heat exchanger being for a motor vehicle is considered to be a mere statement of intended use. Additionally, the limitations in claims 27 and 37 regarding the hydraulic diameter of the flow channels for the fluids being between 0.1mm and 3mm is considered to be a matter of obvious design choice to one of ordinary skill in the art. No criticality or unexpected results are seen or have been disclosed for the recitation of the claimed diameters of the flow channels. Furthermore, one of ordinary skill in the art would have expected Applicant's invention to work equally as well as with the diameters of the inventions disclosed in either Wu et al or Sonoda.

3. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al in view of Sonoda as applied to claim 23 above, and further in view of U.S. Patent No. 5,628,206 to Baba. Wu et al as modified above by Sonoda discloses the claimed invention except for the bottle build between the first and second series of plates. Baba teaches a condenser comprising a series of stacked plates and a bottle or reservoir 33 adjacent the plates. Thus, it would be obvious to provide Wu et al with a bottle or reservoir, in view of Baba, to yield the predictable result of providing an expansion container for the heat exchanger. The location of the bottle or reservoir with respect to

the plates is considered to be a matter of obvious choice to one of ordinary skill in the art. No criticality or unexpected results are seen or have been disclosed for the claimed location of the bottle or reservoir. Furthermore, one of ordinary skill in the art would have expected Applicant's invention to work equally as well as with the device of Baba.

4. Claim 21 recites the limitations "the inlet pass" and "the outlet pass" in lines 3 and 4, respectively. There is insufficient antecedent basis for this limitation in the claim.
5. Claim 31 recites the limitations "the inlet pass" and "the outlet pass" in lines 3 and 4. There is insufficient antecedent basis for this limitation in the claim.
6. Claims 21 and 31 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
7. Applicant's arguments filed May 20, 2008 have been fully considered but they are not persuasive. Applicant's specific remarks regarding dependent claims 21, 27, 31, and 37 are believed to be addressed above.
8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William E. Tapolcai whose telephone number is (571) 272-4814. The examiner can normally be reached on Mon. - Thurs., 6:30 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl J. Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William E. Tapolcai/  
Primary Examiner, Art Unit 3744

wet  
May 27, 2008